

(3c) (3)
Properties and Properties VIII
Separation auto-oxoid systems. VIII. Colour
of *p*-nitrophenylacetyl amides. IX. Colour of
p,p-nitrophenylpropionyl amides. V. A. Le-
marash and N. A. Stepanov (Ozhept. vned. Acad.
Sci. U.R.S.S., 1934, 26, 668-673, 678-679).—
VIII. *p*-Nitrophenylacetyl amide, m.p. 180°, and
p-hydrogenamide, m.p. 220°, are almost colourless,
but the *p*'-dimethylbenzoyl amide, m.p. 217°, is
reddish-orange. (Z. A., 1937, II/98.)

IX. *p,p*-Nitrophenylpropion-*p*'-acetyl amide, m.p. 180°,
is almost colourless, but the *p*'-Acetoxy-, m.p. 181°,
and *p*'-dimethylbenzoyl amide, m.p. 226-5°, are pale
yellow and reddish-orange, respectively. The authors'
previous theories are modified to include the colours
of these six compounds.
R. S. C.

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Separated auto-oxoid systems. VI. The color of nitrobenzyl derivatives of aromatic amines. V. A. Bondar' skii and V. I. Stavitskaya. *J. Russ. Chem. C. S. I. M.* **9**, 617 (1950); cf. *C. A.* **33**, 4069. Previous explanations of color in nitrobenzyl derivs. of aromatic amines (I) ranging from yellow to dark red or brown) as due to transformation into quinoid or nitro derivs. (by migration of H to NO_2 or to NH_2), or as due to the formation of a conjugated chromophore system are considered unsatisfactory. Instead, it is postulated that the color is due to interaction, either internal or external (not definitely decided), between the nitro-oxoid system ($\text{C}(\text{N})_2\text{NO}_2$) and the auto-oxoid system (CH_2NH_2) to form a complex, in which deformation in both of the chromophore systems occurs, with the resultant production of color. Replacement of the CH_2NH_2 group by CH_2NS reduces the color intensity, indicating that amine weakens the auto-function of the N atom in compds. of type I. Comparison of the colors of I with the corresponding nitro-oxo compds. reveals that N_2N and CH_2NH_2 have practically the same chromophore properties. (See references.) John Eysk

Separation of auto-oxidized systems. VII. The influence of the second autoxid group on the color of nitrobenzyl-amine. V. A. Izmail'ski and V. I. Stavnyshkaya. *J. Gen. Chem. (U.S.S.R.)*, 1962, 14(1961), cf. C. A., 53, 7738. In colored compounds of type $(\text{O}_2\text{N}-\text{Ar}-\text{NHAc})_2$ (I), the color is due to interaction between the nitro-oxoid system ($\text{O}_2\text{N}^+ \cdot \text{Ar}^{\text{II}}$) and the amino group, NHAc . Introduction of a 2nd autoxid group (OH , OMe , NMe_2) in the ρ -position to NH results in the formation of a di-oxoid system, $\text{-NH}(\text{CH}_2)_2\text{-cavox}$, with accentuation of the bathochromic effect. The effect on the color of NHAc and Me groups introduced in the ρ - and σ -positions is complicated by the phenomena of chromism. The following 2,4-dinitrobenzyl derivs. are prep'd. by the method of Sachs and Kempf. *Ber.* 35, 1256 (1872): 2,4-dinitrobenzylidine (II), reddish orange, m. 94°; from 2,4-dinitrobenzyl chloride (III) and PhNH_2 ; ω -toluidine deriv. (IV), bright orange, m. 86° from III and ω -toluidine; β -toluidine deriv. (V), red, m. 101°; 3-acetaminoaniline deriv. (VI), dark red, m. 136°; 4-acetaminoaniline deriv. (VII), red or bright orange, m. 130°. V (orange) exhibits slightly greater bathochromism than either II (yellow form) or IV (orange-yellow). IV also exists as an unstable yellow form. The bathochromic effect of β -NHAc in VII (orange-yellow) is unexpectedly weak. VI exists as a yellow, extremely unstable form and as a dark red stable form. The marked accentuation of color obtained by introduction of a 2nd autoxid group (NHAc) in the σ -position could not be explained. T.L.

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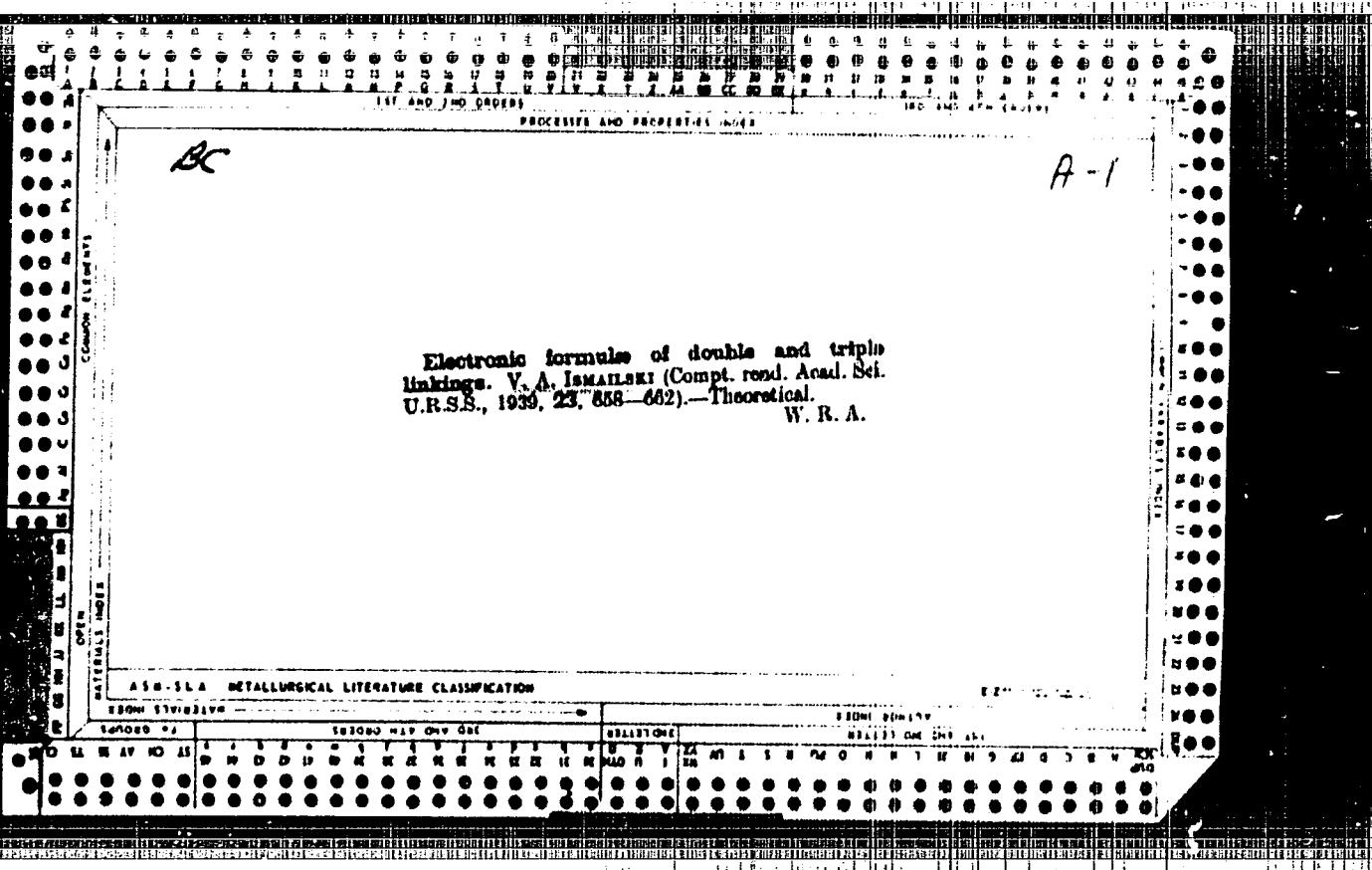
PROCESS AND PREPARATION

Alkylation. VII. Preparation of diethylmethanedic acid and diethyl-m-aminophenol. V. A. Izmail'skul and B. A. Popov, *J. Applied Chem. (U. S. S. R.)* 12, 776 (from French, 785) (1939); *cf. C. A.* 33, 12933. One mol. of metamic acid was alkylated with 4.0 mols. of EtCl in excess to avoid the formation of mono-deriv. In 73% alc. of EtOH in the presence of 2 mols. of NaOH (42% soln.) and 1.57 mols. of calcined soda at a temp. not lower than 125° in the autoclave, with a yield of 93.5% (theory). Under the same conditions but using 35% aq. NaOH, the yield was 60%. The Na salt of diethylmethanedic acid is sol. in 96% alc. which is advantageous for the purification of the product of reaction from mineral salts, especially since the solv. of mineral salts in 96% alc. considerably decreased in the presence of Na diethylmethanide. The fusion of the aq. paste of Na diethylmethanide (1 mol.) with 5.5 mols. of NaOH at 270-75° yielded 70.7% (theory) of diethyl-m-aminophenol (74% when KOH was used). Two modifications of diethyl-m-aminophenol were obtained, m. 54 and 74°, resp. **VIII.** Alkylation with ethyl chloride in the presence of calcium oxide and magnesium oxide. *Ibid.* 780-9.—Ethylation of metamic acid was carried out in alc. medium (not less than 80% of alc.) in the presence of CaO and MgO at 123-35°. In this case the same yield was obtained with only 50% excess of EtCl. The liberation of the product without distg. off the alc. was not possible because metathetic decompn. with soda or Na₂SO₄ proceeded in alc. soln. extremely slowly even on prolonged heating. It is explained by the complex formation of CaCl₂ with EtOH. A. A. Podgorny

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H. G.:

1.1.2. Molecular Structure

Auxenoid systems. XI. Classification of compound chromophoric systems containing electrophilic chromophores and auxochromes. XII. Analysis of structural conditions which determine the colour of compounds with broken and unbroken conjugated systems. V. A. Ivanovskii [Transl. from *Zhur. Sist. U.R.S.S.*, 1940, 28, no. 914, p15-110].—XI. A method of classification based on the interaction between the auxenoid and chromophoric systems is suggested. The method recognises (a) compounds with conjugated auxenoid systems; (b) chromophoric systems with separate auxenoid systems in the same mol.; (c) chromophoric systems with an auxenoid chromophoric system separated in the mol. from the electrophilic system; (d) conjugated systems with auxochromic groups in non-linear positions relative to the electrophilic group; one part of the enoid system is communal to the auxenoid and auxchromophoric systems. Resonance and electronic displacements and their influences on colour are discussed.

XII. Compounds are coloured not only when electrophilic chromophores and auxochromes are in the same C_6H_5 nucleus, but also in systems where groups exist in two nuclei separated by bivalent groups which interrupt the conjugation. The intensity of the colour depends on the "power," no., and position of the principal polar groups and on the structure of the conjugated system coupled to the polar groups. These generalisations, and the relations between colour and resonance, are exemplified and discussed. J. O'M. H.

The theory of color of organic compounds V. A. Irmal'shikin, Irady Chetverog Sosvezchiya Voprosov Khimii i Tekhniki, 1940, 41 (2); Khim. Referat. Zhur., 4, No. 9, 121-140 (1941). The color of organic compounds is attributed to mesomerism. Analyses of the mesomeric state in a ρ -nitroso system indicate that the benzene ring under a counter-effect of 2 groups of identical polarities, resulting in mesomerism accompanied by bathochromic effect. Such a system readily loses 2 electrons from the ρ -C atoms or from the azo atom, thereby being oxidized into quinones. Thus the introduction of an azo group into the ρ -position of the Ph nucleus of nitrophenylamine produces the bathochromic effect as the result of the increase in the activity of valence electrons of the N atom in the NH₂ group and of the increase in the effect of this atom on the state of the system. The state of the individual systems of which the given mol. is composed must be considered for the analysis of bathochromic and hypsochromic effects.

W. R. Henn

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Syntheses of proposed antimalarial compounds. I. Relationship of structure and pharmacological properties. V. A. Izmail'skii and A. M. Simonov. *J. Gen. Chem. (U.S.S.R.)* 10, 1580 (1940). — I. and S. state that pharmacological properties of mols. are probably due to the "condition" of individual atoms or groups in the mol. creating an external "field of the mol." which governs distribution and conversion of the material in the organism. They believe that the structure of many therapeutically active reagents may be greatly simplified and embark upon the synthesis of antimalarials contg. neither quinoline nor acridine nuclei. 3-Nitro-4-benzimidazoles was prep'd. in a 94% yield by dissolving 25.2 g. of 3-nitro-4-aminonimide in 280 cc. acetone, adding to it 20.7 g. of KOH powder (ignited) and, while stirring and cooling, 22.8 g. BrCl. The stirring was continued 2-3 hrs., then the mixt. was brought to a boil for a few min. On cooling a yellow orange cryst. product, m. 130-4.5°, sepd. The nitro compd. was reduced with Fe filings in AcOH. The yield was 82% of white needles, m. 200-200.5°. The amine was heated with BaI for a short time, yielding the benzylidene deriv., m. 107° (yellow needles). 8-Methoxy-1-benzoylbenzimidazole was formed in a 90% yield (m. 116°) when a dil. HCl soln. of I was treated with NaNO₂. A 60% yield of 4-(3-dimethylaminopropylamino)anisole was obtained by heating 4.84 g. I and 3.3 g. BuNCH₂CH₂CH₂Cl (10% excess) with 2 cc. abs. alc. 2 hrs. at 110-12°, 3 hrs. at 130-5° and 10 hrs. at 160-8°. The product was a thick oil which was dissolved in 200 cc. water at 50-60°. The

undissolved part was filtered off and the filtrate was dried with ether to ext. unreacted alkoxide. Then it was treated with a soln. of 4 g. KOH and the pape. was filtered off and dried in a vacuum desiccator. The product was recryst. 3-4 times from alc. and once from a 1:1 mixt. of EtOH and petr. ether; m. 110-6.5° (cryst.). C and H analysis check. Solns. of the mono-HCl salt in H₂O are quite stable, are weakly acid and are bitter. 3-Nitro-4-(phenylsulfonamido)anisole was prep'd. by nitration of PhSO₃NHCO₂HMe in glacial AcOH. It m. 115-116°, reduced with iron filings in dil. AcOH, it yielded 100% of a product, m. 115.5-17.5°. II. (*γ*-Bromo-*β*-methylpropyl)benzimidazole. A. M. Simonov. *Ibid.* 1943-92.

Compds. of the general formula MeOCOCl₂N(C₂H₅)₂CH₂CH₂NEt₂, were synthesized. These compds. when tried on birds showed no activity to Plasmodium when tried on birds showed no activity to Plasmodium. reduction. 4-(*p*-Tolylsulfonamido)anisole (13.8 g.) in 30 cc. of glacial acetic acid cooled to 11° was added during 40 min. to 8.7 g. Fe(NH₄)₂(4.130) in 7 cc. glacial AlOEt. Mixing at 10-15° was continued for 2 hrs. after which the 3-nitro compd. was filtered out; 41% yield of mineral m. 103.5-4° (cryst.). The nitro oil (3.800 g.) in 12 cc. concd. H₂SO₄ was allowed to stand overnight, then poured into 100 cc. H₂O and enough NaOH was added to be smelld. A 98.8% yield of 3-nitro-4-aminonimide, m. 122-3° (from alc.), was obtained. 3-Nitro-4-(*p*-tolylsulfonamido)anisole (15 g.) in 160 cc. alc. alc. was refluxed for 12 hrs. with 16.5 g. Hg(H₂O)₂Cl and 2 g. ignited potash. The mineral salts were filtered off

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and the alc. was evapd. The residue was dissolved in ether and the ether soln. was washed with NaOEt & H_2O and dried over NaSO_4 . The ether was evapd. and the residue was recrystallized from alc. More than 84% of 3-nitro-4-[*N*-(3-diethylaminopropyl)-*p*-tolylsulfonamido]anisole (I), m. 77.5-78°, was obtained. I (13 g.) after standing overnight in 25 cc. 90% H_2SO_4 , was poured on 80 cc. H_2O and was neutralized with NH_4OH . The oil formed was exd. with C_6H_6 , dried over NaSO_4 and filtered. The C_6H_6 was driven off and the residue (8 g.)

was fractionated *in vacuo*. An 83% yield of a red oil (II), b.p. 191.5-3.5°, was obtained. It did not solidify at -15°; its picrate has 2 forms, m. 114-15° and 120-7°. A 70% yield of 3-amino-4-(3-diethylaminopropylamino)anisole (III), b.p. 106.8° (cor.), was obtained by reducing II with SnCl_4 in 1:1 HCl . III (7.7 g.) was gradually mixed with 6 g. Ac_2O and heated on a water bath for 15 min. The reaction mixt. was dissolved in 30 cc. 4 N HCl and refluxed 1.5 hrs. The reaction product sepd. as an oil when a 40% NaOH soln. was added. The oil was exd. with ether, dried over potash and filtered. The ether was evapd. and the residue was dried, *in vacuo*. A 95% yield of 2-methyl-3-methoxy-1-(3-diethylaminopropyl)benzimidazole (IV), b.p. 184-8° (picrate, m. 230°), was obtained. 3-Nitro-4-acetamidoisoxazole (63 g.) was added during 1 hr. to a well-agitated mixt. of 180 g. iron filings, 600 cc. H_2O and 13.8 g. NaCl . The agitation was continued for 1.5-2 hrs. at 90°. The hot reaction mixt. was cooled and the solids were twice washed with 300 cc. of boiling H_2O . A 90-2% yield of 3-amino-4-acetamido-

anisole (V), m. 120-0.8° (cor.), was obtained. V (19 g.), 10.8 g. $\text{Et}_2\text{N}(\text{CH}_2)_2\text{Cl}$ and 3.8 cc. alc. alc. were equilibrated and heated 2-3 hrs. at 110-115° and 13 hr. at 130-135°. The cooled reaction mixt. was dissolved in 40 cc. hot 10% and then exd. with ether, and treated with 100 g. of 40% potash. The dark oil was exd. with 400 cc. C_6H_6 . A part of the oil did not dissolve in C_6H_6 . It was dissolved in alc. The alc. soln. was filtered and dried. The alc. was driven off and an oily product, sol. in H_2O , was obtained. It was a mixt. of quaternary salts. The C_6H_6 ext. was washed with a small amt. of H_2O , dried over potash and filtered. The C_6H_6 was driven off and the residue was fractionated in range 2-3 times. A 10% yield of 2-methyl-3-methoxy-1-(3-diethylaminopropyl)benzimidazole (VI), b.p. 190.5-1.5°, was obtained; dipicrate, m. 318-19°. A mixture of VI (2.4 g.) and 2.3 g. HgH was heated at 211° for several hrs., then 100 cc. H_2O and enough HCl for a weakly acidic reaction was added. The excess HgH was distd. with steam. The hot soln. was filtered and evapd. to dryness. The residue was dissolved in a small amt. of alc. and ppzd. with ether. A yield of 2.5 g. of 6-methoxy-3-styryl-1-(3-diethylaminopropyl)benzimidazole-2HCl dihydrate (VII) was obtained. It (1 g. H_2O) of crystals, at 10°, and m. 224-6°. V (27 g.), 13.8 g. Ac_2O and 110 cc. 4 N HCl were refluxed 1 hr. The HCl salt ppzd. in the cold was filtered off and washed with 4 N HCl and dissolved in 100-150 cc. H_2O . It was neutralized with NH_4OH , yielding 70% of 2-methyl-3(6)-methoxybenzimidazole (VIII), m. 141.5-2.5° (from petr. ether); picrate, m. 197°, mist, of 8.1 g. VIII and 7.66 g. $\text{Et}_2\text{N}(\text{CH}_2)_2\text{Cl}$, 4 cc. alc. was agitated and heated 3 hrs. at 110-115°, 4 hrs. at 130-135°. It was treated with 20 cc. hot HgH , exd. with ether, and the aq. layer was treated with 50 g. of 40% potash. The sepd. oil was exd. with 180 cc. C_6H_6 . The C_6H_6 soln. was exd. with NaOEt soln. and dried over potash. After evapn. of the C_6H_6 the oil was dried, at 25 mm. The yield was 43.8 g., m. 189-90°; picrate, m. 290-8°.

David Aderly

Auxo-enoid systems. XV. Concerning the preparation of 8-altr-o-1-naphthylmethyl chloride and the colors of the arylamine derivatives. V. A. Imsalić and A. N. Kozin. *Compt. rend. acad. sci. U. R. S. S.* 1962, 16, 621-4 (1940) (in German); cf. *C. A.* 34, 78412. $-1\text{-C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{Cl}$ nitrated in AcO with HNO_3 (d. 1.52) at 5-15°, giving a thick yellow oil from which the 8-altr-o-1-naphthylmethyl chloride can be recrystd. out of alk. or benzene, or less efficiently out of benzene. At 15°, it is difficultly sol. in benzene, ligroin, helter in alk., and very sol. in benzene and ether. It m. at 105°. Its constitution is established by oxidation with 18-30% HNO_3 . The arylamine and its derivs. form a series of highly colored compds. providing the nitro groups are in an unsym-position relative to the CH_2 group and a quinoid configuration in the *o*-altr-o form is not possible. The color series is classified on the basis of the intramol. spin auxo-enoid system: (Eph)-K-Q-(Auxo)-K where K is an enoid system, in this case the conjugated system of the aromatic nucleus; (Auxo) is the "donor group" or auxochrome; (R^{Ph}) the electrophilic group NO_2 ; and Q the conjugation-disrupting group $-\text{CH}_2-$ free from double bonds. The series (auxo group, color of crystals, color of powder, m. p., resp.) is: II, orange, orange-yellow, 100%; ρ -Me, red, bright red, 74%; m -Me, orange, orange, 100%; ρ -OMe, red, orange, 150%; m -OMe, orange, orange, 83%; ρ -OH, dark red, dark red, 130%; m -OH, brown-red, brown-red, 135.5%. These are produced by heating the chloride 1 hr. at 80° with the corresponding arylamine. The production of color is connected with the action of complex-building forces and the appearance of "complexes" in the solution. Cf. *J. Russ. Phys.-Chem. Soc.* 18, 102 (1886).

S. R. Kurnas

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Q. M. R. K.

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PROPERTIES AND PROPERTIES INDEX

Separated donor-enoid systems. XVII. Color of nitrobenzoyl and nitrobenzyl derivatives of 5-aminoanthrone and 2-aminofluorene. V. A. Izmail'skil. *J. Gen. Chem. (U.S.S.R.)* 13, 685-92 (1943) (English summary); cf. *C. A.* 36, 4304. -- To designate the complex of electron donor and chromophore, I. proposes the term "donor-enoid system," instead of the previously used "auxochromic." The coloration of Ulyanov's compds. (*C. A.* 36, 4110) is due only to the direct interaction of 2 individual systems, donor-enoid and nitro-enoid, of the compds. in question. XVIII. *N-(p-Nitrophenoxyethyl)-aniline and its derivatives.* V. A. Izmail'skil and Z. M. Bairamov. *Ibid.* 693-6. -- *p-Nitrophenoxyethyl chloride* (from nitration of $\text{PhCH}_2\text{CH}_2\text{Cl}$), m. 49°, was reacted with 2 mols. of PbN_3 at 135-40° for 6-10 hrs.; the mixt. was treated with 5% HCl, washed with Na_2CO_3 soln. and water and crystd. from EtOH to yield $p\text{-O}_2\text{NC}_6\text{H}_4\text{CH}_2\text{CH}_2\text{CH}_2\text{NH}_2$, m. 69° (from EtOH), a yellow solid. The EtOH-soln. residue yielded $(p\text{-O}_2\text{NC}_6\text{H}_4\text{CH}_2\text{CH}_2)_2\text{NP}_4$, m. 171° (from benzene), a yellow solid. The last compd. yields the corresponding *N-formyl compd.* by heating with 90% HCO_2H , m. 71° (from AcOH), a colorless solid; *N-Ac compd.*, from Ac_2O , m. 91° (from EtOH), a faintly yellow solid. Heating of $\text{O}_2\text{NC}_6\text{H}_4\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl}$ with 2 mols. p-anisidine at 135-40° for 10 hrs. gave *N-(p-nitrophenyl)-p-anisidine*, m. 81° (from EtOH), deep red solid, giving on formylation and acetylation deep red solids, which do not give satisfactory anal. results. The analogously prep'd. *N-(p-nitrophenoxy)-p-anisidine*, m. 134° (red-brown), and *p-(p-nitrophenoxyaniline)acetyl chloride*, m. 177° (yellow-brown). Exchange reaction between *p-nitrophenoxychloride* and NaI gave the corresponding iodide, colorless, m. 87° (from EtOH). O. M. K.

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PROPERTIES AND PROPERTIES INDEX

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Separated donor enoid systems. XXI. Color effects in *N*-(3-phthalimidopropyl) and *N*-(2-phthalimidostyryl) derivatives of aromatic amines. A. V. Belovetov and V. A. Leman'skii. *J. Gen. Chem. (U.S.S.R.)* 14, 216-25 (1944) (English summary); cf. *C.A.* 39, 7014. —When *N*-phthalimide and $\text{C}_2\text{H}_5\text{CH}_2\text{Br}$ in 1:4 mol. ratio are refluxed 5 hrs. at 150-165°, they give 90% *N*-(3-chloropropyl)-*N*-phthalimide (*I*), m. 67.5-85°, and *N*-PhNH₂, give a mixt. from which fractional crystn. from EtOH gives *N*-(3-phthalimidopropyl)aniline, yellow, m. 91.5-4°, and *N,N*-bis(3-phthalimidopropyl)aniline, pale yellow, m. 145.5-6.5°. Similar reactions give *N*-(3-phthalimidopropyl)-*p*-nitroaniline, yellow, m. 91.8-2.5°, and *N,N*-bis(3-phthalimidopropyl)-*p*-nitroaniline, orange, m. 127.8-0°; and *N*-(3-phthalimidopropyl)-*p*-acetoanilide, orange, m. 176.5°, and *N,N*-bis(3-phthalimidopropyl)-*p*-acetoanilide, pale yellow, m. 106.8-7.5° (all m. ps. cor.). All HCl salts of these compds. are colorless. Since the color cannot be due to interaction of the electron donor group A and the electron acceptor B along a conjugated chain, it must be due to interaction of the external fields, giving a form of derivs. of aromatic amines. The bathochromic effect of complex resonance. The decreased color of the diphtalimide compds. is due either to branching of the chains or to weak, deformed deformation of the A groups due to dispersion of their

effects over 2 B groups. XXII. Color effects in 3 phthalimidopropyl ethers of phenols. A. V. Belovetov *Ibid.* 22(1):33. —*N*-(3-Chloropropylphthalimide reacts when heated with $\text{K}_3\text{C}_6\text{O}_4$ and $\text{RC}_2\text{H}_5\text{OH}$ to give compds. of the type $\text{C}_6\text{H}_5(\text{CO}_2\text{C}_2\text{H}_5)_2\text{NHC}_6\text{H}_4\text{CO}_2\text{C}_2\text{H}_5\text{R}$. The ether in which R = H m. 91.3-2° and is colorless. When R = OMe, the colorless ether (*I*) m. 106.6°. A by-product in the formation of *I* is *N*-(3-chloropropylphthalimide acid, m. 142.5-4.5°, which is converted to *I* by long boiling with 50% EtOH. The colorless ether in which R = AcNH m. 103.8-4.1° (*II*), and the by-product *N*-(3-(*p*-acetamidophenoxy)propylphthalimide acid, m. 180-0.5° (decompn.), is also formed and gives *II* with EtOH. Hydrolysis of *II* gives the ether in which R = NH₂ (*III*), orange, m. 97.0-9.1°. When R = NMe₂ (*IV*), the orange-yellow ether m. 150.0-0.5°. Thus the phenol ethers have less color than the corresponding derivs. of aromatic amines. The bathochromic effect of complex resonance. —Sims. of *IV* have

H. M. Lester

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Polyaryl methane compounds. I. Color of derivatives of diphenylmethane and triphenylmethane having the nitro and the donor group in different nuclei. V. A. Tsvetkov and M. A. Volodina. *Zh. Neorg. Khim.* (U.S.S.R.) 13, 834-47 (1948) (English summary). In system (Ph)K Q K (Rn) (Rn = donor group, Rph = electrophile group, K = conjugated diacid (Q = a bivalent group breaking the conjugated system) having identical or similar nitro-enoid and donor-enoid systems the colors are similar. The appearance of color does not depend on proton migration with formation of a quinonoid *anti*-nitro structure as shown by the intense color of compds. of the type $\text{O}_2\text{NC}_6\text{H}_4\text{NHC}_6\text{H}_4\text{NMe}_2$; these compds. also have an unstable *trans* form. The color is apparently produced by interaction of the external fields of the complex chromophore groups, as shown by comparison of compds. contg. NO₂ and NH₂ or NR₂ groups in the same or different rings in unconjugated positions; the independent interaction of the external fields may have a greater effect than has been assumed by the resonance theories. *p*-Nitro-*p*-dimethylaminodiphenylmethane, prepnd. by condensation of p -O₂NC₆H₄CH₂Cl with PhNM₂ in AcOH, yellow solid, m. 187° (from EtOH), 189° (from pyridine). *p*-MethylnC₆H₄NHC₆H₄CH₂Cl, heated with PEH₂ in dil. HCl, gave *p*-amine *p*-dimethylaminodiphenylmethane, m. 100°, b.p. 215°, almost colorless pale yellow crystals. The above yielded on treatment with p -O₂NC₆H₄COCl in benzene, (*p*-(*p*-nitrobenzamido)-*p*-dimethylaminodiphenylmethane, m. 177° (from EtOH), deep-red crystals. *p*-(*m*-Nitrobenzamido)-*p*-dimethylaminodiphenylmethane (no consts. given) was prepnd. analogously and isolated in white crystals from benzene and crystals from EtOH.

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APPENDIX METALLURGICAL LITERATURE CLASSIFICATION

Editorial note

phenylmethyl bromide (II) on bromination as above, colourless, m. 136-7° (from K_2O -benzene). $\text{p-Nitrophenylbenzene-phenoxy-dichloride}$, m. 88-7° (38%), which was treated with benzene in the presence of AlCl_3 under various conditions; neither a tri- nor tetraphenyl deriv. could be isolated. I heated with PhNMe_2 in AcOH gave brown-yellow crystals of m -nitro- p '-dimethylaminostyrene-phenoxy-methane, m. 162-3° (from MgCl_2) (47%). Similarly, II gave yellow-orange p -nitro- p '-dimethylaminostyrene-phenoxy-methane, m. 208-7° (from MgCl_2) (35%). I, heated with PhOH in the presence of AcOH and HgCl_2 , gave almost colourless m -nitro- p '-hydroxystyrene-phenoxy-methane, m. 155-60° (from petr. ether), which turns yellow in the presence of alkali. I, heated with PhNH_2HCl in AcOH , gave m -nitro- p '-aminostyrene-phenoxy-methane, m. 117-81° (from dil. HCl), as yellow-green grains; $m.p.$, m. 198-30°.

O. M. K.

CA

17

A water-soluble camphor, Camphor VI. V. A. Lennett¹ and Dobroly Aha. *Nauk S.S.R.* 42, 216-30; *Comp. rend. acad. sci. U.R.S.S.* 42, 212-15 (1944) (in English).—Stable eq. dispersions of camphor (I), useful for intravenous administration to counteract shock, were prepd. by using combinations of alc. and Na salicylate (II) to solubilize I. Stable eq. dispersions of I were not obtained by using either alc. or II alone. By increasing the alc.: I ratio from 8:1 or 10:1 to 30:1, the II:I ratio, required for stably dispersing I, was reduced greatly. Typical stable dispersions contained 1.0% to 2.0% I, 30% to 20% alc. and 25% II. Research had a solubilizing action similar to that of II but glycerol, glucose and the Na salts of phthalic, β -naphthalenesulfonic, camphorsulfonic and benzoic acids proved ineffective. A favorable effect on shock was observed in preliminary expts. with the Na salts of *t*-camphorsulfonic and *t*-camphocarboxylic acid and with *t*-borneol derivs. of the type $C_6H_5OCORCOOH$ and $C_6H_5OCORCOOII$, prepd. from phthalic and succinic acids. J. W. Petty

OPEN NATIONALS MOL

AIA-11A METALLURGICAL LITERATURE CLASSIFICATION

110000 110000

110000

110000

Izmailsky, V. A.

"Resonance and Colourity of the Lichenylanine Derivatives. (XXII) In the Conjugated Systems Bound by the Donor N-Atom." by V. A. Izmailsky and A.M. Sitenov (p. 1659)

SO: Journal of General Chemistry (Zhurnal obshchei Khimii) 1946, Volume 16, No. 10

王國維《宋詞二集序》：「詞之為物，雖曰小道，亦云雅物。」

"Resonance and Colourity of the 14-Substituted Benzene Derivatives. I. The Resonance and Colourity of the 2,4-Dinitrophenyl-nitro Derivatives. The Electrocromatic Effect of an Adipic Acid Group in the Para-Position and Resonance of a Two-Electron System." by A. V. Sirenov and V. A. Ismailsky (p. 167)

SG: Journal of General Chemistry (Dergi (Bekâhi) Kimisi) 2026, Volume 16, No. 10

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

C.R.

Color of cyanine dyes. Absorption of light by molecular compounds between quinoline or pyridine salts and amines. V. A. Izmak'ikh and P. A. Solodkov. *Doklady Akad. Nauk S.S.R.* 60, 587-600 (1948). —On the basis of the previously given classifications, the color of a 1,1'-dialkylbiscyanine salt is detd. by the interaction between the quinoline electrophilic component (the iminium chlorophor C:N⁺) and the electrodonor (amine component). By analogy, mol. compds. involving similar electrophilic and electrodonor groups, but not sep'd. by CH or a similar group Q, should absorb in very much the same way as the cyanines. The following are examples of such mol. compds. with 1-methylquinoline ρ -toluenesulfonate (I), 1-ethylquinoline iodide (II), and 1-benzyliquinoline chloride (III); the compds. with I are formed on grinding the dry substances, compds. with II and III only on wetting with the solvent. The data refer to solns. about 0.07-0.08 M, and give, in that order: the mol. compd. (color in solid state), solvent, color of soln., λ_{max} in m μ , log I_0/I (concn. in mole/liter): Ph-NH + I (yellow-brown), CHCl₃, red-brown, 480, 2.83 (0.0820); the same in EtOH, red-brown, 480, 2.83 (0.0820); Ph-NH + III (ruby-red after recryst. from amyl ale.), EtOH, red-brown, 480, 1.63 (0.0820); Ph-NH + II (brown-red), EtOH, brown-red, 480, 2.32 (0.0751); Ph-NMe + I (light yellow), CHCl₃, orange-yellow, 440, 0.92 (0.0820); ρ -Me₂NCH₂NHAc + I (dark yellow, 440, 0.92 (0.0820); ρ -Me₂NCH₂NHAc + I, CHCl₃, yellow-brown, 435, 1.30 (0.0820); PhNMe₂ + I, CHCl₃, yellow, 440, 1.18 (0.0820). At concns. 0.02-0.04 M (1-2%), the complexes dissociate, absorption falls rapidly, and λ_{max} moves towards shorter wavelengths. These mol. compds. are all decomp'd. by H₂O. Analogous colored compds. are formed also by pyridine salts, e.g., 1-methylpyridine ρ -toluenesulfonate (IV) + PhNMe₂, light yellow; IV + Ph-NH, intensely yellow; IV + ρ -Me₂NCH₂NHAc, brown-yellow; IV + ρ -Me₂C₆H₄NH₂, lemon-yellow. With phenols (hydroquinone, 1- and 2-naphthol), pyridine and quinoline salts give yellow products of various shades. The deep colors of the mol. compds. cannot be interpreted by dipole deformations or van der Waals forces but are instances of a particular type of complex resonance (I., C.A. 34, 7841; I. and Belotovetov, C.A. 36, 4842-9). The color phenomena of the mol. compds. described are no doubt related to the color of microquinonoid compds. and quinhydron. N. Thor

A.I.P.-SLA METALLURGICAL LITERATURE CLASSIFICATION

1980 SUBJECTS

1980 SUBJ CAT

IZMAIL'SKIY, V. A.

PA 7715

USSR/Chemistry - Benzene, Electron
Formulas of
Chemistry - Naphthaline

Apr 1948

"The Principle of Alternation of Spin and π -Electron
Formulas; Benzene, Naphthaline, Oxygen and Other Ex-
amples," V. A. Izmail'skiy, Moscow State Pedagogical
Inst imeni V. P. Potemkin, 4 pp

"Dok Ak Nauk SSSR" Vol LX, No 3

Discusses principles of alternation of spin and
applies theories to molecules of various chemical
compounds. Submitted by Acad A. Ye. Poray-Koshits
26 Feb 1948.

7715

Intermolecular interactions and color. Absorption spectra of molecular compounds of quinolinium salts with aromatic amines. V. A. Imaish'kin and P. A. Nekrasov (V. I. Potrinkin Pedagog. Inst., Moscow). *Doklady Akad. Nauk S.S.R.* 73, 501-4 (1955).—Substances with isolated chromophores may develop color under suitable conditions (*C.A.* 43, 407); this may occur even in intermol. complexes. Spectra of 2-(β -dimethylaminoethyl)quinoline (I) and 1-ethyl-2-styrylquinolinium iodide (II) were studied. At 10^{-4} M the substances show absorption max. at 368 and 338 m μ , resp. with a 37,700 and 24,700, resp. An equimolar mixt. of I and II at 10^{-4} M gives max. at 392 m μ (30,300), and at 10^{-4} M max. at 300 m μ (24,000). A 4:1 mixt. at 10^{-4} M gives a max. at 308 m μ (32,300), while a 1:4 mixt. at 10^{-4} M gives a max. at 308 m μ (41,000). I ethiodide in MeOH gives at 10^{-4} M a max. at 323 m μ (64,000). In H₂O it is 491 m μ (37,900), while its equimolar mixt. with I in MeOH gives at 10^{-4} M a max. at 343 m μ (73,800). The curves are reproduced. It is pointed out that a conjugated C-bond bridge is not an essential condition for color development. The ability to form colored complexes is greatest in I, and smaller in simpler molts such as PhNM₂ and Ph₂NH. The same general factors modify color in such systems as are operative in usual electrophile-electrodonor systems in conjugated chromophores. It is suggested that a new type of electronic bond, named exo-bond, may exist, which differs from the π -bond by absence of accompanying σ -bond. G. M. Kosolapoff

Chem Abs v48
1 - 26 - 54
Electronic Phenomena

Absorption spectra of molecular complexes of aromatic amines with quinolinium salts. Absorption spectra of molecular complex of 4-(*p*-dimethylaminostyryl)quinolinium with 1-ethyl-2-styrylquinolinium iodide. V. A. Izmail'skiy and P. A. Slobod'ko (V. P. Potemkin Pedagog. Inst., Minsk, Doklady Akad. Nauk S.S.R. 91, 1119-12 (1953); cf. C.A. 43, 407*i*; 45, 4557*b*).--The mol. complex (I) of 2-(*p*-dimethylaminostyryl)quinoline with 2-styryl-1-ethylquinolinium iodide has abs. max. 505 m μ (ϵ 43,300). With the corresponding m μ styryl compd. of hemicyanine type (2-(*p*-dimethylaminostyryl)-1-ethylquinolinium iodide, m. 240°) the complex has an abs. max. 525 m μ (64,000). This confirms the earlier suggestion that an exomol. complex can form a chromophore system whose optical effects are close to those of a corresponding conjugated mol. system. The mol. complex of 4-(*p*-dimethylaminostyryl)quinoline (III) with 1-ethyl-2-styrylquinolinium iodide at 1:1 concn. has abs. max. 402 m μ , which agrees with that of III, with complete dissoen. of the complex, at concn. in MeOH of 10^{-4} mole/l.; at 10^{-4} concn. abs. max. is 530 m μ (ϵ 12,000) showing the complex formation and a bathochromic shift. Further increase of concn. does not affect the abs. max. position but increases the intensity to 30,800 at 10^{-2} concn. Thus the shift of the dimethylaminostyryl group from ortho to para position gave a bathochromic effect of 25 m μ , with a drop in ϵ_{max} from 43,300 to 30,800. This corresponds to the phenomena found in hemicyanines with styryl groups. The complex of III with 1-ethylquinolinium iodide does not form at 10^{-4} concn., and even at 10^{-2} concn. only a minute amt. of complexing occurs.

G. M. Kosolapov

(3) Phys
6/23/64

Zadania I Cwiczenia Z Chemii Organicznej, (Assignments and Exercises of Organic Chemistry, by) (V. A. Izmail'skiy) (A. Simonov) (and) (Ye. Smirnov) Warszawa, Państwowe Wydawnictwo Naukowe, 1954.

460 P. Illus., Tables.

Bibliography: P. (463)

Translated From The Russian: Uprazhneniya Po Kursu Organicheskoy Khimii.

SO: N/5
614.12
.19

IZMAIL'SKIY, V.A., professor, zasluzhennyy deyatel' nauki.

Basic manual for chemical technology ("General chemical technology."
S.I.Vol'fkovich, A.P.Egorov, D.A. Epshtein. Reviewed by V.A. Iz-
mail'skii.) Khim. v shkole 9 no.5:69-70 S-0 '54. (MLRA 7:9)
(Chemistry, Technical) (Vol'fkovich, Semen Isaakovich)
(Egorov, A.P.) (Epshtein, David Arkad'evich)

IZMAIL'SKIY,V.A.; SMIRNOV,Ye.A.

Isolated chromophoric systems. Part 29. Comparative spectroscopic studies of 4-nitrobenzylidene and 4-nitrobenzyl derivatives of aromatic amines. Zhur.ob.khim.25 no.7:1400-1412 J1'55.

1. Moskovskiy gorodskoy pedagogicheskiy institut imeni V.P.Potemkina i Moskovskiy neftyannoy institut imeni I.M.Gubkina.
(Amines--Spectra)

(MLRA 8:12)

EPSHTEYN, D.A., prof.; IZMAIL'SKIY, V.A., prof.; BAJANIK, V.P., dots.;
BELOTSVETOV, A.V., dots.; SMIRNOVA, M.I., tekhn. red.

[Programs of pedagogical institutes; elements of chemical technology for natural science-faculties of pedagogical institutes]
Programmy pedagogicheskikh institutov: osnovy khimicheskoi tekhnologii dlia fakul'tetov estestvoznanija pedagogicheskikh institutov. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, (MIRA 11:9)
1956. 12 p.

1. Russia (1917- R.S.F.S.R.) Glavnaya upravleniya vysashikh i srednikh pedagogicheskikh uchebnykh zavedeniy.
(Chemistry, Technical—Study and teaching)

"APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000619410003-7"

Category: USSR / Physical Chemistry - Molecule. Chemical bond.

B-4

Abs Jour: Referat Zhur-Khimika, No 9, 1957, 29585

Author : Izmail'skiy V. A., Guseva A. N., Solov'yeva Ye. S.
Inst : not given

Title : Exomolecular Interaction and Coloration. VI. Investigation of Absorption Spectra of Molecular Complexes of 1,3-Dinitro-benzene and 2,4-Dinitro-Stilbene with Dimethylamino-Stilbene

Orig Pub: Zh. obshch. khimii, 1956, 26, No 6, 1766-1778

Abstract: The following were studied: reflexion spectrum of 2,4-dinitro-4'-dimethylamino-stilbene (I), its absorption spectra (AS) in CH OH, alcohol, benzene and pyridine, and the AS of the following mixtures: 1) 2,4-dinitrostilbene (II) and 4-dimethylamino-stilbene (III), 2) m-dinitro-benzene (IV) and III, 3) IV and C₂H₅N(CH₃)₂ at different concentrations in pyridine, in the visible region. The $\lambda_{max}^{\text{AS}}$, lg E and AS curves are given. It was found that the region of absorption of II + III is very close to that of I, due to exomolecular interaction (EMI) of electronophilic and electron-donor chromo-

the same being also true of their salts. These results indicate that the acetoxime group cannot be regarded as the main chromophore, contrary to the views expressed on this subject (cf. Sauer et al., J. Am. Chem. Soc., 41, 6460). A theoretical discussion of the phenomena of color in these compounds is presented, based on bathochromic effect induced by electron displacement in the substituent groups, or electron donation of acceptor groups. The

AUTHORS:

Ismail'skiy, V.A., Vishnevskiy, L.B.

SCOV/63-3-C-31/4

TITLE:

Spectra of Absorption and Reflection of Anilides of 9-Acridinic-Propionic Acid (Anilides of Acridinic Propionic Acididinopropionovoy kislostoj)

PUBLICATION:

Khimicheskaja nauka i promishlenost', 1961, Vol III, No 1,
pp 61-630 (USSR)

ABSTRACT:

Various structures with chromophoric systems have been investigated. The anilide of the 9-acridinic-propionic acid and the n-anisidine of the same acid are only slightly differentiated in the spectrum. With the transition to acridinic salts the coloring becomes more intensive. The ethylicide of the anilide is intensively yellow, but the ethylicide of n-anisidine is dark red. The color may become violet or blue in some cases, if the electron supply is increased. There are 2 graphs and 6 references, 5 of which are Soviet and 1 American.

C-2

Moscow Pedagogical Inst. im V.P. Potemkin.

SOV-3-58-9-7/36

AUTHOR: Suvorov, N.P., Docent, Candidate of Physico-Mathematical Sciences, RSFSR Academy of Pedagogical Sciences

TITLE: The Teacher Must Receive a Diploma Corresponding to His Knowledge (Uchitel' dolzhen poluchat' diplom sootvetstvuyushchiy yego znaniyam)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 9, pp 29-32 (USSR)

ABSTRACT: Secondary school teachers of chemistry are trained either by the chemical faculties of universities, by the faculties of biology, chemistry and fundamentals of agriculture of pedagogical institutes or by the biology and soil faculties of universities. The majority of teachers come from the faculties of natural sciences of pedagogical institutes and the biological-soil faculties of universities. Graduates of these faculties are, by their basic speciality, biologists, and the duties of chemistry teachers are imposed on them additionally. The majority of specialist-chemists, who have graduated from the chemical faculties of universities, enter the employ of scientific institutions or the chemical industry, and only a few become teachers. The author points out that often chemistry teachers of senior classes have only little knowledge of

Card 1/3

SOV-3-58-9-7/36

The Teacher Must Receive a Diploma Corresponding to His Knowledge

chemistry and physics. He refers to Professor V.A. Izmail'skiy's report "On the Training of Teachers of Chemistry at Pedagogical Institutes" which was discussed on March 1953 by a large conference of the Institut teorii i istorii pedagogiki Akademii pedagogicheskikh nauk RSFSR (Institute of Theory and History of Pedagogics, RSFSR Academy of Pedagogical Sciences). The report proved the inadequacy of the training of teachers of chemistry at pedagogical institutes. Yet it was only now, after 5 years and subsequent to the May plenum of the TSK KPSS, that the Board of the RSFSR Ministry of Education adopted a resolution which realized both Professor V.A. Izmail'skiy's suggestion and that of the Mendeleev Society. The author quotes the resolution, and states that the Ministry should discontinue qualifying persons as teachers of chemistry, who have graduated from the biological-soil faculties of universities and faculties of

Card 2/3

The Teacher Must Receive a Diploma Corresponding to His Knowledge

natural sciences of pedagogical institutes.
There is 1 table.

ASSOCIATION: Akademiya pedagogicheskikh nauk RSFSR (RSFSR Academy of Pedagogical Sciences)

Card 3/3

AUTHORS: Izmail'skiy, V. A., Vishnevskiy, L. D. SGV/20-121-1-30/55

TITLE: Absorption Spectra of Molecular Complexes Formed by 9-(*p*-Dimethylaminostyryl)-Acridine and 10-Ethyl-9(β -Carbometoxy-ethyl)-Acridine Iodide (Spektry pogloschcheniya molekularnykh kompleksov 9-/p-dimetilaminostiril/-akridina s 10-etyl-9/ β -karbometoksi-etyl/-akridiniyiodidom)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 1, pp. 111-114 (USSR)

ABSTRACT: It is a generally known theorem that for the bathochromic shift of the coloration an uninterrupted conjugated K-system has to exist between the interacting chromophorous components, i.e. between the electrophile (B) and the electron emitting (A) components (an endomolecular conjugation of the chromophores, "optic conjugation", Ref 1). B and A form together a generalized π -electronic system - the Ko-chromophore (Ref 3). Compounds with isolated chromophorous systems AK and BK may also have an intensive coloration; the systems are separated by a group which interrupts the conjugation (Refs 2, 3) if strong electron emitting AK- and electronophilic BK systems exist. In the last case the intensive coloration depends on the exomolecular con-

Card 1/4

SOV/20-121-1-30/55

Absorption Spectra of Molecular Complexes Formed by 9-(β -Dimethylaminostyryl)-Acridine and 10-Ethyl-9(β -Carbometoxyethyl)-Acridine Iodide

sibility of a re-etherification (pereetherifikatsiya) must be rejected as well, since 1) the component solutions AK and BK were prepared separately and were not heated before the spectrometric investigation, 2) because both components are acridine compounds. The authors suggest in connection with the above mentioned facts a hypothesis: according to which the bathochromous effect in the case of the concentration increase of acridine iodide (Table 1 Nr 1 - 3) is connected with the formation of a molecular complex of the type (AK' + BK), above all for a chloroform solution. BK is the acridine salt, AK' a pseudosalt of the latter. There are 1 figure, 1 table, and 13 references, 10 of which are Soviet.

ASSOCIATION: Moskovskiy gorodskoy pedagogicheskiy institut im. V. P. Potem'kina (Moscow Municipal Pedagogical Institute imeni V. P. Potemkin)

PRESENTED: March 15, 1958, by B. A. Kazanskiy, Member, Academy of Sciences,
Card 3/4 USSR

5(3)

SOV/63-4-2-28/39

AUTHORS: Izmail'skiy, V.A., Malygina, A.V.

TITLE: Spectra of the Derivatives of 1-(Benzene-Azo)-2-Naphthol Containing Counter-Polarized Electron-Donor Systems

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 2,
pp 279-280 (USSR)

ABSTRACT: The conclusion was drawn from [Ref 1-3] that the presence of two donor chromophors in n-position produces a system with increased electron-donor properties due to counter-polarizing effects. This conclusion has been verified by studying the effect of introducing CH_3^- and OCH_3 -groups into several derivatives of 1-(benzene-azo)-2-naphthol. It is assumed that the introduction of two OCH_3 - or OCH_2H_5 -groups will have a still stronger effect.

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There is 1 table, 1 graph and 3 Soviet references.

Moscow Pedagogical Inst. in V.P. Potemkin

Moscow Textile Inst.

5 (3)

AUTHORS:

Izmail'skiy, V. A., Limanov, V. Ye.

SOV/62-59-8-34/42

TITLE:

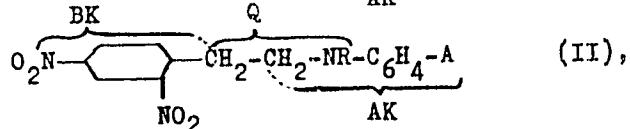
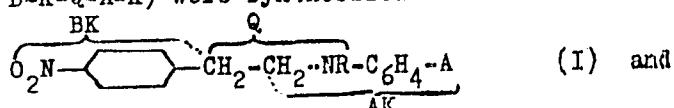
Synthesis and Reflection Spectra of the Derivatives of N-[β -(4-Nitrophenyl)-ethyl]-aniline and N-[β -(2,4-Dinitrophenyl)-ethyl]-aniline

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 8, pp 1500-1504 (USSR)

ABSTRACT:

Compounds of the following kind (built according to the pattern B-K-Q-A-K) were synthesized:



where BK denotes the combined electronophilic chromophoric system, B the electronophilic chromophoric component, K the conjugated benzene system (A = the chromophoric component acting as an electron donor in the m or p position in relation to the

~~Card 1/3~~

1/2

5(3)

AUTHORS:

Izmail'skiy, V. A., Limanov, V. Ye.

DOI/62-59-9-34/40

TITLE:

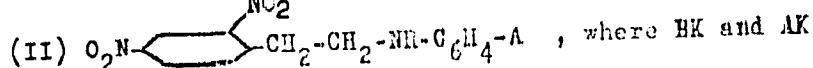
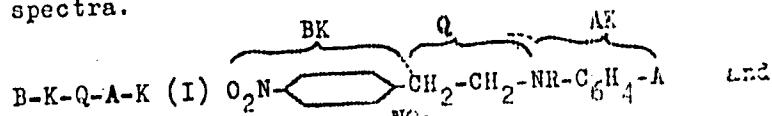
Absorption Spectra of Derivatives of N-[β -(4-Nitrophenyl)-ethyl]-aniline and N-[β -(2,4-Dinitrophenyl)-ethyl]-aniline

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 9, pp 1684-1688 (USSR)

ABSTRACT:

The absorption spectra of compounds having the structure given below are investigated. The behavior of these compounds and their chromophores in solution is then discussed on the basis of these spectra.



denote the connected electrophilic chromophores (B being the simple chromophor), K the conjugated chromophoric benzene system (A the electron donor group in p- or α -position to the NR-group),

Card 1/3

Absorption Spectra of Derivatives of
N-[β -(4-Nitrophenyl)-ethyl]-aniline and N-[β -(2,4-Dinitrophenyl)-ethyl]-aniline

SOV/62-55-9-3;1/49

Q the group interrupting conjugation. Data of spectra obtained are given in a table. The absorption spectra of both types of compounds exhibit 4 peaks, the γ and δ peaks corresponding to the components AK and BK. Shifts of the α and β peaks are caused by interaction of the electron donor and electrophilic groups. In comparison to the total extinction of the components, peaks in the spectrum of the AKQBK-system are shifted to lower wave lengths. This shift is caused by an excess of one component. For type (I) this shift increased with increasing strength of the donor group introduced. The position of the donor group also had an effect on the extent of shift, this being larger in p- than in m-position. An increase in the electron donor properties of the complex had a bathochromic effect also. The same effect was also produced by replacing the NH-group by an alkyl group, which also caused a shift of the α and β peaks to longer wave lengths. The effect was intensified by lengthening the Q-chain. A considerable shift was also produced by introducing a second nitro group. From these findings it is assumed, that in solution the molecules have the tendency to intermolecular interaction,

Card 2/3

5 (3)

AUTHORS:

Izmail'skiy, V. A., Dmitrienko, S. V. SOW/79-29-6-14/7?

TITLE:

Exomolecular Reactions and Coloration (Ekzomolekulyarnyye vnutrimeyestviya i tsvetnost'). VIII. Absorption Spectra of Molecu-
lar Complexes of 9-(p-Dimethyl-amino-styryl)-acridine With the
Salts of 10-Alkyl-9-methyl-acridine (VIII. Spektry pogloshcheniya
molekulyarnykh kompleksov 9-(p-dimetilaminostirili)-akridina s
solyami 10-alkil-9-metilakridiniya)

PERIODICAL:

Zhurnal obshchey khimii. 1959. Vol 29, Nr 6, pp 1842 - 1850
(USSR)

ABSTRACT:

The authors investigated the absorption spectra of the alcohol solutions of 9-(p-dimethyl-amino-styryl)-acridine (nucleophilic chromophore component AK) with the salts of the 10-ethyl- and 10-benzyl-9-methyl-acridine as well as of the 10-Et-9-styryl-acridinium (electronophilic chromophore component BK). The occurrence of the new absorption spectrum range with $\lambda_{\text{max}} 610$ m μ is explained, as a consequence of the component reaction, by the formation of the nucleophilic complex. The maximum of the complex is very close to $\lambda_{\text{max}} 616$ m μ of the corresponding dye with the conjugated chromophore systems of the B-K-A type. The interpretation of this process by an occurring intercyclic

Card 1/2

(3)

SU7/79-29-B-57/81

AUTHORS: Izmail'skiy, V. A., Malygina, A. V.

TITLE: Counterpolarized Systems and Coloration. I. Spectra of Some
4-Nitro-benzanilide Derivatives Containing Some Electrodonor
Chromophores in One NucleusPERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8,
pp 2623 - 2630 (USSR)

ABSTRACT: This paper represents a further development of the investigations carried out by V. I. Stavrovskaya (Refs 9,10). Two auxochromic groups in paraposition to each other form a counterpolarized system (AK) with an increased auxochromic behavior which causes an intensification of the color. In order to check the influence exerted by an addition of two donor groups in counterposition upon the reflection and absorption spectra, the 4-nitro-benzoyl arylamides of structure (I), which contain the donor groups CH_3 , OCH_3 , OC_2H_5 to be integrated in the anilide nucleus in positions 2 and 5, were investigated. The introduction of two CH_3 -groups exerts little effect, whereas the addition of a second donor

Card 1/3

Counterpolarized Systems and Coloration. I. Spectra of Some SOV/79-29-8-37/81
4-Nitro-benzanilide Derivatives Containing Some Electrodonor Chromophores in
One Nucleus

5-CH₃-, and especially 5-OCH₃-group, to the methoxy derivative causes an intensive bathochromic shift in the reflection spectrum as well as in the absorption spectrum in the long-wave range. In the case of 4'-nitro-dimethoxy benzanilide, a well-pronounced step is formed which indicates the occurrence of band (II) of the absorption range. A comparison of the spectrum of the 2,5-dimethoxy derivative (Nr 5) with the absorption spectra of the 4-nitrobenzoyl anilides with a second donor group (OCH₃, OH, NMe₂) in paraposition with respect to the NH-group, indicates that the effect of the 2,5-dimethoxy-dcuble-nucleophilic system((1-CO NH, 2,5-(OCH₃)₂)) is closely related with the effect of the 4-methoxy group ((1-CO NH, 4-OCH₃)). In the presence of the 4-benzamino group, the influence of two groups upon the coloration in the solid phase is also very well pronounced, and leads to an intensification of the color, from bright yellow to bright orange, in the order 2-OCH₃ < 5-CH₃ < 2,5-(OCH₃)₂ < 2,5-(OC₂H₅)₂. The spectrum in the solution is determined by the rhaction of the systems

Card 2/3

SOT, 7-19-8-16/81

3(3), 3(4)

AUTHORS:

Izmail'shii, V. A., Lianov, V. Ye.

TITLE:

Counterpolarized Systems and Coloration. II. Reflection Spectra
of the Derivatives of N-[β -(4-Nitrophenyl)-ethyl]-aniline, with
Para- and Meta-position of the Donor Chromophores

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, p. 2631-2638 (USSR)

ABSTRACT:

This paper continues the investigations initiated by Z. L. Br. ramov (Ref 4) which were carried on by V. I. Stavrovskaja, Yu. A. Smirnov, and P. I. Samokish on various special compounds (Ref. 2,5,6,7,8). The authors synthesized a number of derivatives of 2,5,6,7,8). The authors synthesized a number of derivatives of N-[β -(4-nitrophenyl)-ethyl]-aniline of the general formula (III), where A is one of the donor groups CH_3 , OCH_3 , CH_2OH , NHCOCH_3 , NH_2 , in the para- or meta-position with respect to the NH-group. All compounds synthesized were colored, irrespective of the presence of two NH_2 -groups in group A which interrupts the conjugation, thus excluding the possibility of a rigid conjugated chain; the coloration of the most intensely colored compound, with the $p\text{-NH}_2$ -group, reaches a dark red. The rules governing the variations in the coloration of the compounds, which were visually

Card 1/3

Counter-polarized Systems and Coloration. II. Reflection $\text{S}_{\text{D}}/\text{T}_{\text{D}}$ -Spectra of the Derivatives of $\text{N}[\beta-(4-\text{Nitrophenyl})\text{-ethyl}]\text{-imine}$, With Para- and Meta-position of the Donor Chromophores

detected, were defined more exactly by the reflection spectra obtained for the powdery products. The fundamental cause of the coloration of the compounds in the solid phase must be found in the direct reaction of the imine double-bonds ($\text{C}=\text{N}$) with the electrodonor group (AK) of the complex systems by means of exomolecular forces, i.e., of the π -electrons which bring the formation of complex compounds of the nitro-compounds with aromatic amines and phenols. The introduction of a donor group into the para-position was found to intensify the coloration to a greater extent than its introduction into the meta-position: the para-double-donor counterpolarized system is more nucleophilic than the meta-double-donor sympathized system. As to the para-compounds, the intensification of coloration proceeds normally according to the intensity of the electrodonor chromophore. An exception is the unexpectedly intense coloration of the para-oxy-derivative. The OH-group exerted a strong effect also in the meta-position. In the compounds of the meta-series, there are deviations from the nature of the effect in the para-position.

Caro 40

Counter-polarized Systems and Coloration. II. Reflection S07/79-8-58/51
Spectra of the Derivatives of N-[β -(4-Nitrophenyl)-ethyl]-aniline, With para-
and Meta-position of the Donor Chromophores

were observed. The effect of the m-NH₂-group is especially weak,
as was not to be expected. There are 5 figures, 1 table, and 14
references, 11 of which are Soviet.

ASSOCIATION: Moskovskiy pedagogicheskiy institut imeni Potemkina (Moscow Pe-
dagogical Institute imeni Potemkin)

SUBMITTED: July 21, 1958

Card 3/3

5(3)

AUTHORS: Izmail'skiy, V. A., Limanov, V. Ye. SOV/79-29-9-25/76

TITLE: Counterpolarized Systems and Coloration.
III. The Effect of the Substitution of the $\text{CH}_2\text{CH}_2\text{NH}$ -Group
for the CH_2NH -Group and of the Methylation of NH in the
Compounds of the Structure $p'\text{-O}_2\text{NC}_6\text{H}_4(\text{CH}_2)_n\text{NHC}_6\text{H}_4\text{A-p}$

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 2927-2936
(USSR)

ABSTRACT: In order to examine the conclusion of the previous paper
(Ref 1) saying that the intensification of color in a com-
pound in solid phase is to be regarded as a result of the
formation of the doubly nucleophilic, counterpolarized system
with intensified nucleophilic character, in the introduction
of a second nucleophilic chromophore component A ($\text{A} = \text{CH}_3$,
 OCH_3 , OH , NHCOCH_3 , NH_2 in para- or meta-position to the NH-group)
(I and II) into the para-position to the first nucleophilic
chromophore component, the authors synthesized the N-methyl
derivatives of N-(4-nitro benzyl)- and N-[β -(4-nitro phenyl)-
-ethyl]-aniline [See formulas (I) and (II)]. The intensification

Card 1/3

Counterpolarized Systems and Coloration. SOV/79-29-9-25/76
III. The Effect of the Substitution of the $\text{CH}_2\text{CH}_2\text{NH}$ -Group for the CH_2NH -Group
and of the Methylation of NH in the Compounds of the Structure
 $\text{p}'-\text{O}_2\text{N}\text{C}_6\text{H}_4(\text{CH}_2)_n\text{NHC}_6\text{H}_4\text{A}-\text{p}$

of the nucleophilic character by a change in the structure
of the connecting group A, i.e. by introducing the second
alkyl into the NH-group [$\text{CH}_2\text{NH} \longrightarrow \text{CH}_2\text{NCH}_3$ and $\text{CH}_2\text{CH}_2\text{NH} \longrightarrow$
 $\longrightarrow \text{CH}_2\text{CH}_2\text{NCH}_3$], or by prolonging of the chain of the
N-alkyl group [$\text{CH}_2\text{NH} \longrightarrow \text{CH}_2\text{CH}_2\text{NH}$ and $\text{CH}_2\text{NCH}_3 \longrightarrow \text{CH}_2\text{CH}_2\text{NCH}_3$]
does in fact cause bathochromic shifts of the curve of the
absorption spectrum of the dye powder surface in the compound
in solid state; these shifts are similar to that of the curve
when the second nucleophilic group A is introduced into
para-position; the order is the following:
 $\text{CH}_2\text{NHC}_6\text{H}_5 < \text{CH}_2\text{CH}_2\text{NHC}_6\text{H}_5 < \text{CH}_2\text{N}(\text{CH}_3)\text{C}_6\text{H}_5 < \text{CH}_2\text{CH}_2\text{N}(\text{CH}_3)\text{C}_6\text{H}_5 <$
 $< \text{CH}_2\text{NHC}_6\text{H}_4\text{OCH}_3 - \text{p} - < \text{CH}_2\text{CH}_2\text{NHC}_6\text{H}_4\text{OCH}_3 - \text{p} - <$
 $< \text{CH}_2\text{CH}_2\text{N}(\text{CH}_3)\text{C}_6\text{H}_4\text{OCH}_3 - \text{p} .$

Card 2/3

Counterpolarized Systems and Coloration. SOV/79-29-9-25/76
III. The Effect of the Substitution of the $\text{CH}_2\text{CH}_2\text{NH}$ -Group
for the CH_2NH -Group and of the Methylation of NH in the
Compounds of the Structure $\text{p}'-\text{O}_2\text{NC}_6\text{H}_4(\text{CH}_2)_n\text{NHC}_6\text{H}_4\text{A-p}$

When A = p-OCH_3 , the bathochromic shifts are more intensive than when A = H. The coloring of the compounds (I) in solid crystalline phase (in powder) and of the similar derivatives of N-4-nitro benzyl aniline is caused by exomolecular interaction of the antipolar, cochromophoric systems under the formation of a complex meso-system (complex mesomerism). There are 2 figures, 1 table, and 19 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy pedagogicheskiy institut, Laboratoriya khimii krasiteley i problemy tsvetnosti (Moscow Pedagogical Institute, Laboratory of the Chemistry of Dyes and the Problem of Coloration)

SUBMITTED: August 18, 1958

Card 3/3

5.3610
5.3100
~~5(3), 5(4)~~

SOV/20-129-5-25/64

AUTHORS: Izmail'skiy, V. A., Nuridzhanyan, K. A.

TITLE: Absorption Spectra of the Derivatives of 4-NO₂-Diphenyl Amine.
On the Role of NH as Insulator of Optical Conjugation in the
Diphenyl Amine Derivatives

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 5,
pp 1053 - 1056 (USSR)

ABSTRACT: In the compounds of 2,4-dinitro derivatives of diphenyl amine (DPhA), unlike the stilbene derivatives, there is no conjugation to unite both rings to a unitary Ko-chromophore system (Refs 1-3). In fact, the DPhA-derivatives contain NO₂-groups and a donor chromophore component A² = OCH₃, NH₂, NMe₂ in different rings. The two p-electrons of the NH-group in the DPhA are not equivalent to the two π -electrons of the CH-CH-group in stilbenes. The coloration of the said compounds is determined by the system (NO₂)₂C₆H₃NH- which represents the "fundamental chromophore system" of the BKA-type. Therein NH is the first donor group. Group A² is the 2nd donor group

Card 1/4

67014

SOV/20-129-5-25/64

Absorption Spectra of the Derivatives of
1-N₂O₂-Diphenyl Amine. On the Role of NH as Insulator of Optical Conjugation
in the Diphenyl Amine Derivatives

and its derivatives, Refs 3,4) a unitary π -electron system with a unitary excitation vector is missing along the π -system, they investigated the spectra of the DPhA-derivatives (V) (Table 1). The introduction of donors (V) ($A^2 = OCH_3, NH_2$) causes but a slight bathochromic dislocation of the band x^1 (Fig 1). In the case (V) ($A^2 = NMe_2$, Nr 5, Table 1) the entire band was shifted with respect to $O_2NPhNEt_2$ both from the bathochromic and the hyperchromic aspect (Fig 2). The above-mentioned conclusions reached by the authors (Ref 2) were confirmed by the present investigation. Corresponding to (V) two separate systems BKA and A^1KA^2 are present with their own rules of transition into the excited states. These systems "crossing" at the central N-atom thus prove to be bound to one another and in a sense, to be interdependent. The conclusions drawn on conjugation on the basis of the chemical reactivity cannot be regarded

Card 3/4

PHASE I BOOK EXPLOITATION 507/510

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Akademie russischer

Stereochemical relationships in polyisobutylene (Structure of Matter), Part I: Spectroscopy, J. Macromol. Sci., Part A-1, 1969, 3, 115-144.

M.: E. V. Astakhov, Professor; Tech. Ed.: T. P. Polenova

NOTES. This collection of articles is intended

CONTENTS. The articles contained in this collection were taken from the editorial files of the *Journal*, *Chemical News*, *Journal of Physics*, and are concerned with spectroscopic methods as applied on the structures of molecules, the hydrogen bond, ion-pair effects, problems in magnetochemistry, the structure of aqueous solutions of electrolytes, and the chemistry of complex compounds. There are also some individual articles.

PETROV, V. M., AND N. D. ORGINSKAYA. Features of Spectroscopic Manifestation of Hydrogen Bond in Nitroaniline Molecules. 20

The authors thank Ya. S. Bobovich and V. S. Repertov for their interest.

REFERENCES. — 1. N. and V. M. **Perecslav**, *Khimiia Farmatsev-*
 icheskogo Institutu im. S. Ordynskogo, Chemiczno-Farmatsev-
 icheskii Institut im. S. Ordynskogo, Tautomerii of
 *Certain Derivatives Heterocyclic Compounds. III. The Deter-
 *mination of Heterocyclic Equilibrium and Spectra of N-Deriva-
 tives of Heterocyclic Amines.**

Monitoring of Protein-DNA Interaction by Fluorescence [R. K. Bhat, S. K. Bhattacharya, and P. K. Bhattacharya] **Fluorescence Spectroscopic Studies on the Interaction of Cytoskeletal Proteins with Nucleic Acids** [S. K. Bhattacharya, R. K. Bhat, and P. K. Bhattacharya] **Biological and Medical Chemistry of the Aromatic Hydrocarbons** [S. K. Bhattacharya] **Intermolecular Interaction and Oscillation Spectra of Aromatic Compounds**

•

NURIDZHANYAN, K.A.; IZMAIL'SKIY, V.A.

Alkyl derivatives of 4-nitrodiphenylamine. Zhur. VKHO 5
no. 2:237-238 '60. (MIRA 14:2)

1. Moskovskiy pedagogicheskiy institut imeni V.P. Potemkina.
(Diphenylamine)

S/063/60/005/003/007/011/XX
A051/A029

AUTHORS: Kitrosskiy, N.A., Izmail'skiy, V.A.

TITLE: Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

PERIODICAL: Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva im. D.I. Mendeleyeva, 1960, Vol. 5, No. 3, pp. 347-349

TEXT: It was stated (Ref. 1) that the long-wave maximum of molecular complexes of the BK + AK type, where BK is the complex electronophilic chromophore (B is the electronophilic chromophore, e.g., NO_2 ; C = N^+) and AK is the complex electrono-donor chromophore (A is the electrono-donor chromophore, e.g., NMe_2 , K is a conjugated system, e.g., a benzene nucleus), may lie quite close to the maximum of the corresponding compound with a conjugated structure of the cochromophore B-K-A(II), in which the systems BK and AK are superimposed (III). For λ_{max} it may even be shifted bathochromically. ✓

Card 1/1

S/063/60/005/003/007/011/XX
A051/A029

Extramolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

The shift of the absorption boundary clearly points to the noticeable formation of a complex under these conditions. In increasing the molar ratio to $1AK_2 : 150 BK$ (No. 4, Table 1, Fig. 1) the formation of the complex (IV) is observed in a new band ($\lambda_{\text{max.}}^{415 \text{ m}\mu}$), lying in the same region as $\lambda_{\text{max.}}$ of the corresponding compound of the BKA(V) type, viz., $443 \text{ m}\mu$ (although shifted hypsochromically). With a further increase in the excess of the component BK($1AK_2 : 200BK$) for the solution No. 5 α -naphthalamine in nitrobenzene the intensity of the complex band increases up to $E = 1,620$. However, $\lambda_{\text{max.}}^{403 \text{ m}\mu}$ is shifted hypsochromically ($\Delta\lambda = -12$) as compared to No. 4 $\lambda_{\text{max.}}$ (Fig. 1), which calls for an explanation. Similar phenomena were noted for solutions of β -naphthalamine (AK_2) with nitrobenzene (BK) (VI). For the solutions $1AK_2 : 10BK$ and $1AK_2 : 50BK$ a slight bathochromic shift was noted of the λ of the absorption boundary: No. 7 $372 \text{ m}\mu$, No. 8 $398 \text{ m}\mu$, No. 9 $383 \text{ m}\mu$ (Nos. 8, 9, Table 1, Fig. 2). However, at $1AK_2 : 150BK$ $\lambda_{\text{max.}} = 414 \text{ m}\mu$ occurs, and for the solution No. 11 in $C_6H_5NO_2$ $\lambda_{\text{max.}} = 418 \text{ m}\mu$.

Card 3/1

S/063/60/C05/C03/007/011/XX
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular
Complexes of Naphthalamines With Nitrobenzene

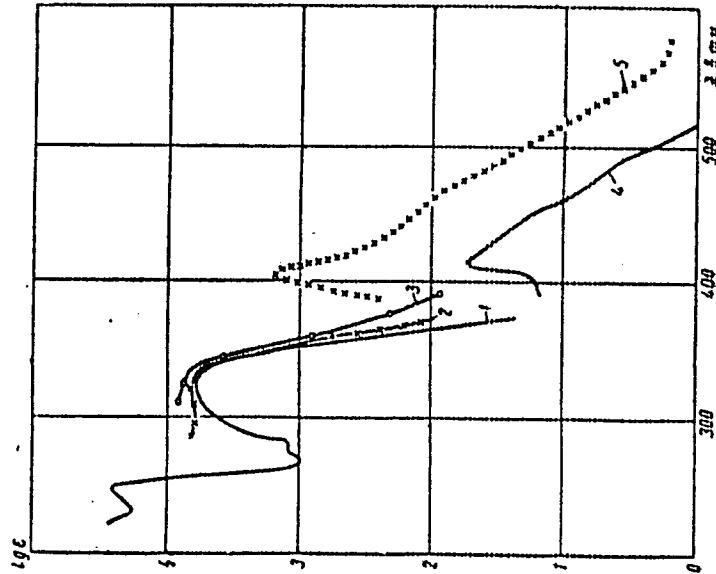
ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State
University)

SUBMITTED: December 7, 1959

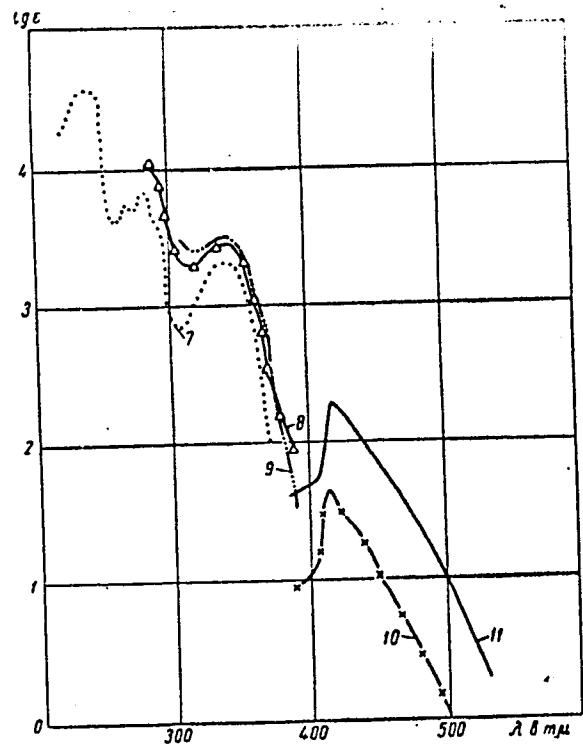
Card 5/11

S/063/60/005/003/007/011/XX
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene



Card 6/11



S/063/60/005/003/007/011/XX
A051/A029

Exomolecular Interactions and Color Ab-
sorption Spectra of Molecular Complexes of
Naphthalamines With Nitrobenzene

Figure 2

Card 7/11



3/063/60/005/003//0011/XX
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular Complexes of Naphthalamines With Nitrobenzene

Table 2: Values of $\lambda_{\text{max.}}$ and $\epsilon_{\text{max.}}$ for solutions of naphthalamines and aniline with nitrobenzene ($c = 10^{-2}$) mole/l)

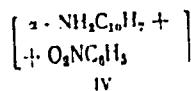
Structure of the amine Solutions	$-\text{C}_{10}^{\text{H}_7}\text{NH}_2$		$-\text{C}_{10}^{\text{H}_7}\text{NH}_2$		$\text{C}_6^{\text{H}_5}\text{NH}_2^5$	
	$\lambda_{\text{max.}}$	$\epsilon_{\text{max.}}$	$\lambda_{\text{max.}}$	$\epsilon_{\text{max.}}$	$\lambda_{\text{max.}}$	$\epsilon_{\text{max.}}$
1AK:150BK	415*	56	414*	42	430***	7
1AK: BK	403**	1620	418**	208	430**	54
B-K-A	(V)443	15140	(IV)420	5370	375***	15450

* in ДХЭ(ДКнЕ); ** in $\text{C}_6^{\text{H}_5}\text{NO}_2$; *** in ethanol

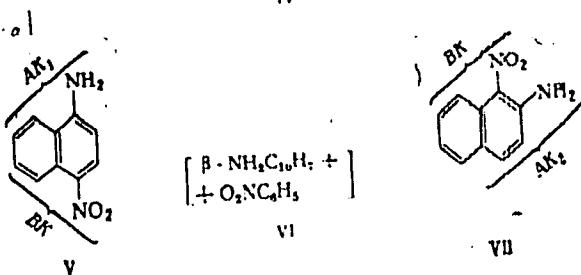
Card 9/11

S/063/60/003/007/007/011/XX
A051/A029

Exomolecular Interactions and Color Absorption Spectra of Molecular
Complexes of Naphthalamines With Nitrobenzene



Structural formula 2



Card 11/11

IZMAIL'SKIY, V.A.; VISHNEVSKIY, L.D.

Absorption spectra of solutions of acridine salts with diphenylamine.
Zhur. VKHO 5 no.6:705-706 '60. (MIRA 13:12)

1. Moskovskiy pedagogicheskiy institut im. V.I. Lenina.
(Acridine--Spectra)
(Diphenylamine--Spectra)

5,4500

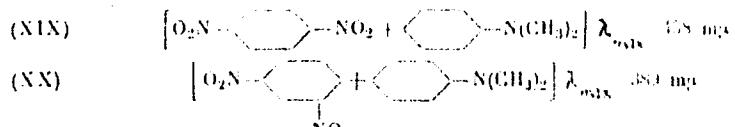
11503
307/1-16-a-5/10

AUTHORS: Tsvetkovskiy, V. A., Belotsvetov, A. V.

TITLE: Counterpolarized Systems and Chromaticity. V. Absorption Spectra of m- and p-Dinitrobenzenes and of their Molecular Complexes with Dimethylaniline. (Concerning Analysis of Structural Influences upon the Spectrum. II)

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 4,
pp 593-602 (USSR)

ABSTRACT: The authors studied the effect of the relative position of two electrophilic chromophores (O_2N -nucleus) upon the absorption spectra of para- and meta-dinitrobenzene alone and in the presence of dimethylaniline, with which it forms molecular complexes (XIX and XX).



Series 1/6

Counterpolarized Systems and
Appropriety, V.

(PMS)
SGV/T/1-23-1-1/76

Absorption spectra of dinitrobenzenes are shown in Fig. 7, while Fig. 8 represents absorption spectra of di-nitrobenzene complexes (with dimethylaniline). It can be seen that the spectrum of p-dinitrobenzene is shifted toward the long wave lengths as compared with the meta-isomer. The bathochromic shift is even more pronounced for the molecular complex ($\text{C}_6\text{H}_4(\text{NO}_2)_2 + \text{C}_6\text{H}_5\text{NMe}_2$).

Thus, the rule of Kauffmann (H. Kauffmann, Ber., 39, 2722 (1906), 44, 2386 (1911), 52, 1422 (1919)) concerning the bathochromic shift in the system with two electron-donor groups in para-position, as compared to the meta-isomer, can be applied to the systems with electrophilic groups. The bathochromic effect is explained by the authors as due to electronic displacements which take place in the para-isomer upon exposure to light and cause $\pi\pi$ molecular deformations and a shift to a pseudoradical system (XXII below) with subsequent increase in electrophilic properties.

100-107

Counterpolarized Systems and
Chromaticity. V.

77358
30V/79-30-2-9/78

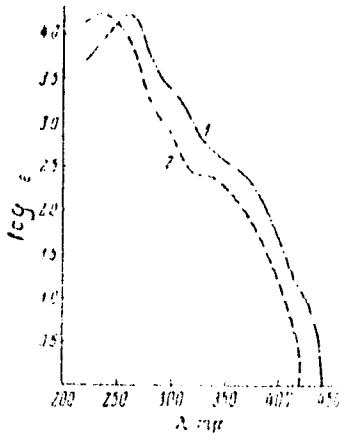


Fig. 2. Absorption spectra in alcohol.
(1) p-dinitrobenzene; (2) m-dinitrobenzene.

Card 3/6

Counterpolarized Systems and
Chromaticity. V.

77558
SOV/70-30-2-9/7d

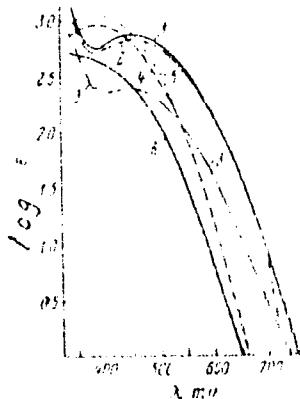


Fig. 3. Absorption spectra. (1) p-dinitrobenzene
in dimethylaniline, conc. of dinitrobenzene
 $5 \cdot 10^{-2}$ M; (2) the same, conc. 10^{-2} M; (3) p-dinitro-
benzene in 20% solution of dimethylaniline in al-
cohol. (Continuation on Card 4)

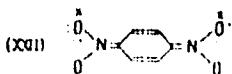
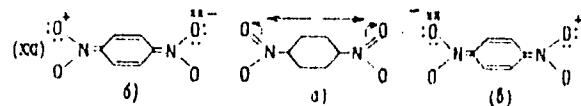
Card 4/6

Counterpoisoned Systems and
Chromaticity. V.

11370
SCV/79-10-1-2/78

(Caption con't.)

alcohol, conc. 10^{-2} M; (4) m-dinitrobenzene in dimethyl-
aniline, conc. $5 \cdot 10^{-2}$ M; (5) the same, conc. 10^{-2} M;
(6) m-dinitrobenzene in 20% solution of dimethylaniline
in alcohol, conc. 10^{-2} M.



Cited 5/6

Chiral-polarized Systems and
Chromaticity. V.

7757
SGV/70-3G-1-9/78

There are 5 figures; 2 tables; and 51 references, 15
Soviet, 4 German, 1 French, 2 U.K., 9 U.S. The 5
most recent U.K. and U.S. references are: H. Lubs.,
Chem. of Synthetic Dyes and Pigments, N.Y., 670 (1955);
H. Gilman., Organic Chemistry, Vol III, 165 (1952);
G. W. Wheeland, Resonance in Organic Chemistry, N. Y.,
283 (1955); L. Doub, J. Vandenhett, J. Am. Chem. Soc.,
71, 2414 (1949); P. Fielding, J. Le Fevre, J. Chem.
Soc., 1950, 2812.

ASSOCIATION: Moscow V. P. Potemkin Pedagogical Institute (Moskovskiy
pedagogicheskiy Institut imeni V. P. Potemkina)

SUBMITTED: February 4, 1959

Card 6/6

S/020/60/132/03/30/066
E011/B008

AUTHORS: Kitrosskiy, N. A., Izmail'skiy, V. A.

TITLE: Absorption Spectra of the Solutions of Dimethyl-amino-
styryl Derivatives of Acridine in Nitrobenzene

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 3,
pp. 598-601

TEXT: The authors wanted to check the assumptions that the dimethyl-amino-styryl derivatives of the acridine and quinoline form colored complexes with nitro-benzene. For this purpose they studied the spectra of the molecular complexes which develop at the dissipation of the components AK₁-AK₅ (I-V). They are anhydro bases of the acridine derivatives (Table 1). Nitro-benzene (BK) was used in great excess as a solvent in order to shift the equilibrium $AK + BK \rightleftharpoons [AK \cdot BK]$ in the direction of the complex. The interaction of the above mentioned AK-compounds with C₆H₅NO₂ (BK) led in all cases to a bathochromic shift of the curve of the anhydro base. The authors explain this by the

Card 1/4

Absorption Spectra of the Solutions of
Dimethyl-amino-styryl Derivatives of
Acridine in Nitrobenzene

S/020/60/132/03/30/066
B011/B008

formation of a complex in the solution. They succeeded in making a determination which they consider to be very important: a new band appeared in the spectrum at the formation of the complex of $C_6H_5NO_2$ with 9-(*p*-dimethyl-amino-styryl)-acridine (AK_1 , I) (2, Fig. 1) or with 9-(*p*-dimethyl-amino-styryl)-3,4-benzacridine (AK_4 , IV) (11, Fig. 2). Its shape and the maximum range are surprisingly similar to the long-wave band and the λ_{max} of corresponding dyes^b (3, Fig. 1 and 12, Fig. 2). The latter dyes develop by addition of HCl and of RX to the anhydro base and from the corresponding complex of the mentioned AK with the acridine component BK (Refs. 2-4). It follows therefrom that $C_6H_5NO_2$ appears in the complex as a sort of aprotic acid. The authors see the more probable explanation of the mentioned similarity of the curves and the absorption ranges in the following: the transmission of the charge at the excitation by light does not occur between the components which form the complex (Ref. 7), but within one of the components, in this case the AK. It obtains a partial charge (δ^+) (Ref. 8) owing to a complex conjugation ("Complex-Mesomerism" Refs. 9,10). The systems AK_1 and AK_4 in the mentioned complexes thus play the role of the ✓

Card 2/4

Absorption Spectra of the Solutions of
Dimethyl-amino-styryl Derivatives of
Acridine in Nitrobenzene

S/020/60/132/03/30/066
B011/B008

the formation of halochromic products with the AK-component. The authors mention A. I. Kipriyanov. There are 3 figures, 1 table, and 18 references, 14 of which are Soviet.

ASSOCIATION: Moskovskiy pedagogicheskiy institut im. V. P. Potemkina
(Moscow Pedagogical Institute imeni V. P. Potemkin)

PRESENTED: January 21, 1960, by B. A. Kazanskiy, Academician

SUBMITTED: January 20, 1960

Card 4/4

LIMANOV, V.Ye.; KOSTROVA, N.D.; MOSHKOVSKIY, Yu.Sh.; IZMAIL'SKIY, V.A.

Hydrogen bond and configuration of molecules p- and m-H-[β -
(4-nitrophenyl)-ethyl]-aminophenol. Izv.vys.ucheb.zav; khim.
i khim.tekh. 4 no.5:867-868 '61. (MIRA 14:11)

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pedagogicheskiy institut imeni Lenina.
(Phenol--Spectra) (Hydrogen bonding)

IZMAIL'SKIY, V.A.; GLUSHENKOV, V.A.

Spectra of 4-nitrodiphenylmethane derivatives. Zhur. VKHO 6
no.1:111-112 '61. (MIRA 14:3)

1. Moskovskiy pedagogicheskiy institut im. V.I.Lenina.
(Methane—Spectra)

IZMAIL'SKIY, V.A.; MOSTOSLAVSKIY, M.A.

Absorption spectra of 3-oxo-2,3-dihydrothionaphthene ant its
derivatives. Part 2: Isomerism of 2-benzylidene-3-oxo-2,3-di-
hydrothionaphthene. Ukr. khim. zhur. 27 no.2:234-237 '61.
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ganicheskikh poluproduktov i krasiteley i Moskovskiy pedagogicheskiy
institut im. V. P. Potemkina.
(Thianaphthenone—Spectra)

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.

Absorption spectra of 3-keto-2,3-dihydrothionaphthene and its derivatives. Part 3. Zhur. ob. khim. 31 no.1:17-28 Ja '61.
(MIRA 14:1)

1. Moskovskiy pedagogicheskiy institut imeni V.I.Lemina i Rubezhanskiy filial nauchno-issledovatel'skogo instituta organicheskikh poluproduktov i krasiteley.
(Thianaphthenone--Spectra)

IZMAIL'SKIY, V.A.; GLUSHENKOV, V.A.

Absorption spectra of diphenylmethane and diphenylethane derivatives containing nitro and amino groups in the different rings.
Dokl. AN SSSR 139 no.2:373-376 Jl '61. (MIRA 14:7)

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(Methane--Spectra) (Ethane--Spectra)

IZMAIL'SKIY, V.A.; MOSTOSLAVSKIY, M.A.

Measurement of spectra in mixed alkane-based solvents as a
method of studying interaction between solute and solvent. Dokl.
AN SSSR 139 no.3:601-604 Jl '61. (MIRA 14:7)

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Nauchno-issledovatel'skogo instituta poluproduktov i krasiteley.
Predstavleni akademikom B.A. Kazanskim.
(Solvents--Spectra)

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.; SHAPKINA, M.M.

Effect of solvents on the process of photochemical and thermal
cis-trans-isomerization of perinaphththiocindigo. Zhur.VKHO 7
no.1:108-109 '62. (MIRA 15:3)

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pedagogicheskem institute imeni V.I.Lenina i Kubezhanskiy
filial Gosudarstvennogo nauchno-issledovatel'skogo instituta
organicheskikh poluproduktov i krasiteley.
(Indigo) (Isomerization) (Solvents)

M. STOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.; SHEVCHUK, I.N.

Nature of phototropic variations of absorption spectra of
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(Benzothiophene—Spectra)

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.; SHAPKINA, M.M.

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(Benzothiophene--Spectra) (Solvents)

MILLIARESI, Ye.Ye.; IZMAIL'SKIY, V.A.

p-Dimethylaminobenzene salts with trifluoroacetic acid
in dichloroethane. Zhur.ob.khim. 32 no.10:3451-3452
(MIRA 15:11)
0 '62. (Aniline) (Acetic acid)

GLUSHENKOV, V.A.; IZMAIL'SKIY, V.A.

Exointeraction band in the spectra of diphenylalkane salts
with NO₂ and OH in different nuclei. Dokl. AN SSSR 142 no.4:820.
823 F '62. (MIRA 15:2)

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Predstavлено академиком B.A.Kazanskim.
(Paraffins-Spectra)

MOSTOSLAVSKIY, M.A.; IZMAILOVSKIY, V.A.

Proportional sensitivity of merocyanine absorption spectra to the
action of solvents. Dokl. AN SSSR 142 no.3:600-603 ja '62.
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tsvetnosti pri Moskovskom pedagogicheskem institute im. V.I.Lenina.
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(Merocyanines--Spectra)

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Spectra of the derivatives of 2,4-dinitroaniline. Presence of
quasiautonomous cochromophore systems. Dokl. AN SSSR 146 no.5:1094-1097
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akademiku B.A. Kasanovu.
(Aniline-Spectra)

MILLIARESI, V. S., IZMAIL'SKIY, V. A.; LARINA, M. K.

Effect of N-methylation on the spectrum of derivatives of
2,4-dinitrodiphenylamine. Zhur. VKHO 8 no.2:238-239 '63.
(MTTA 16:4)

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(Diphenylamine—Spectra) (Methylation)

MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.

Absorption spectra of 3-keto-2,3-dihydro-thionaphthene
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on absorption spectra and photostability of substituted
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33 no.3:739-744 Mr '63. (MIRA 16:3)

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(Benzothiophene—Absorption spectra)
(Substitution (Chemistry))

GLUSHENKOV, V.A.; IZMAIL'SKIY, V.A.; MOSHKOVSKIY, Yu.Sh.

Spectra of the electron donor-acceptor complexes of 4-nitro-diphenyl alkanes containing a donor group in the other nucleus. Electron paramagnetic resonance effect. Dokl. AN SSSR 153 no.6:1363-1366 D '63. (MIRA 17:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley, Institut khimicheskoy fiziki AN SSSR i Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V.I. Lenina. Prestatvleno akademikom A.N. Tereninym.

IZMAIL'SKIY, V.A.; FEDOROV, Yu.A.

Effect of substitution of the benzene ring with a naphthalene ring
in compounds having individual chromophoric systems. Zhur. VKHO 9
no. 3:359-360 '64. (MIRA 17:9)

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Spectrum genetics of the derivatives of benzylideneaniline and
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Lenina.

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(MIRA 18:7)
khim. 39 no.3:768-771 Mr '65.

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NAUMOV, Yu.I.; KAMENSKIY, V.A.

Microstructure and electron-acceptor properties of the sulfofluoride group. Dokl. AN SSSR 163 no.6:1404-1407 Ag '65.
(MERA 16:8)

I. Laboratornye kachestva i problemy tsvetnosti pri Moskovskom pedagogicheskem institutu im. V.I.Lenina. Submitted January 30, 1965.

NOV. 13, 1967. 11:30 A.M. P.T. 10°

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1. Realevskiy gosudarstvennyy zemelno-lesnoy institut im. V.I.Lenina. Submitted June 3, 1941.

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GRATIISKII, V.A.; POLEVSKII(KOV), P.F.

Microstructure of thiophene and the genetics of species. Dokl. AM SSSR 159 no.5:1083-1086 D '61 (MIR '61)

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MOSTOSLAVSKIY, M.A.; IZMAIL'SKIY, V.A.

Absorption spectra of 3-keto-2- β -dihydrothionaphthene and
its substitution d-rieva. Part 7: Benzylidene derivatives
of 5 nitro-3-keto-2,3-dihydrothionaphthene. Zhur. ob.
khim. 35 no.3:520-524 Mr '65. (MIRA 18:4)

MILLIARESI, Ye.Ye.; IZMAIL'SKIY, V.A.

Theory of the origin of the absorption spectra of 2,4-dinitroaniline and 2,4-dinitrodiphenylamine. Experimental confirmation of the presence of quasiautonomous chromophore systems. Zhur. ob. khim. 35 no.5:776-785 My '65. (MIRA 18:6)

1. Laboratoriya khimii krasiteley i problemy tavetnosti pri Moskovskom pedagogicheskem institute imeni Lenina.

25(7)

AUTHOR: Izmalkov, A.A., Engineer

SOW/117-59-2-18/27

TITLE: The Punching of Fastening Holes (Probivka krepezhnykh otverstiy)

PERIODICAL: Mashinostroitel', 1959, Nr 2, pp 30-31 (USSR)

ABSTRACT: The author describes and praises his invention; a special die for punching holes along the rims of the crown of carbon steel discs of segment steel saws. Previously, such holes were drilled by drilling machines. The discs were 1.5-1.8 mm thick, the holes had 4-5 mm in diameter. The drilling of holes done by the Kirzhach and Minsk tool plants produced irregular holes with burrs. The new die made of steel R18, when properly thermo-treated, made up to 30,000 punchings without regrinding. It has been in operation for more than one year. The holes punched by the die were much more exact and cleaner than the holes made by drilling. The rate of production was increased two times. The new die

Card 1/2

IZMALKOV A. Yu.
ISMAIKOV, A. Yu.

"On the Oil-Less Binder "P" used at the Plant "Serp i Molot"

report presented at Scientific-Technical Session on Progressive Technology of Casting Molds, organized by the NTOMASHPROM of the Khar'kov Oblast', in Khar'kov, 14-16 Nov 1957.

Liteynoye Proizvodstvo, 1958, No 4, pp. 28-30

GUBIN, Georgij Viktorovich; KUCHER, Aleksandr Mikhaylovich; BYKOV,
Gennadiy Vasil'yevich; IZMALKOV, Aleksandr Zekharovich;
YARKHO, Ye.N., otv. red.; KACHALKINA, Z.I., red. izd-va;
SABITOV, A., tekhn. red.

[Roaster of ores] Obzhigal'shchik rud. Moskva, Gosgortekhnauka
izdat, 1962. 68 p. (MIRA 15:10)
(Ore dressing)

PYSIN, S.L.; KISELEV, A.I.; IZMAIKOV, I.G.; BARABANOV, M.TS.

Automatic device for simultaneous drilling of four nail holes in window sashes. Suggested by S.L.Pysin, A.I.Kiselev, I.G.Izmalkov, M.TS.Barabanov. Rats.i izobr.predl.v stroy. no.16:45-45 '60.
(MIRA 13:9)

1. Rabotniki derevoobrabatyvayushchego kombinat^m No.3
Glavmospromstroymaterialy Mosgorispolkoma, Moscow, L-ya Karacharov-
skaya ul., d.8.
(Windows) (Drilling and boring machinery)

IZMALKOV, L.I.

Problem of the optimum surface smoothness of parts of screw
presses. Izv.vys.ucheb.zav.; pishch.tekh. no.3:120-125
'59. (MIRA 12:12)

1. Krasnodarskiy institut pishchevoy promyshlennosti. Kafedra
tekhnologii metallov.
(Power presses) (Surfaces(Technology))

IZMALKOV, I.I.; MAVRIYENKO, P.K.

Efficient geometry of the screw press plates. Izv. vys.
ucheb. zav.; pishch. tekhn. no.6:93-95 '63.
(MIRA 17:3)
I. Krasnodarskiy politekhnicheskiy institut, kafedra tekhnologii metallov.

IZMAL'KOV, Vasiliy Vasil'yevich, shofer; GRECHKO, V.M., red.; DONS'KAYA, G.D., tekhn.red.

[Reducing the cost of automotive transportation] Snizhenie sehestoimosti avtomobil'nykh perevozok. Lit.zapis' M.S.Blantera. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transporta i shosseinykh dorog RSFSR, 1960. 39 p. (MIRA 13:6)

1. Podol'skaya avtokolonna No.28 Ministerstva avtomobil'nogo transporta i shosseynykh dorog RSFSR (for Izmal'kov).
(Transportation, Automotive--Cost of operation)